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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/090,350	03/04/2002	Masahiro Shibamoto		3984

26021 7590 01/14/2004
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EXAMINER


RICKMAN, HOLLY C

ART UNIT PAPER NUMBER

1773

DATE MAILED: 01/14/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/090,350	SHIBAMOTO ET AL. 	
	Examiner	Art Unit	
	Holly Rickman	1773	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 7-10, 13-14, 18-20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-6, 11, 12 and 15-17 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- | | |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) Paper No(s). ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449) Paper No(s) ____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Claims 7-10, 13-14, and 18-20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b) as being drawn to a nonelected apparatus, there being no allowable generic or linking claim. Election was made **without** traverse in Paper No. 10142003.

Specification

2. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms which are not clear, concise and exact. The specification should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: p. 18, line 4, "tree" should be "three"; it is not clear what is meant by "placed eccentrically to the substrate" – see line 11 for instance.

Claim Rejections - 35 USC § 112

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim5 and 6 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 5-6 are rendered indefinite by the phrases "as relatively a larger number" and "to allow." Relatively larger as compared to what? It is not clear what two groups

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are being compared here. Furthermore, "to allow" does not make sense in the context of "larger number of sputtered particles having the direction component along the direction of the magnetic anisotropy to allow." Clarification is requested.

Claim Rejections - 35 USC § 102

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-4, 11-12, and 15 are rejected under 35 U.S.C. 102(b) as being anticipated by Okumura et al. (US 5700593).

Okumura et al. disclose a magnetic recording medium having a substrate formed from glass, a seedlayer formed thereon from a material such as CrTaN or VTaN wherein the surface of the seedlayer is exposed to oxygen. An underlayer is formed on the seedlayer and an anisotropic magnetic layer is formed thereon (col. 2, lines 31-37; col. 3, lines 54-58; col. 4, lines 15-45; col. 5, lines 21-23; Table 3, examples 2 and 4).

7. Claims 1, 3, 11-12, and 15-17 are rejected under 35 U.S.C. 102(b) as being anticipated by JP 10-162338.

JP 10-162338 discloses a magnetic recording medium having a glass substrate, an amorphous seedlayer of CrNbN or CrTaN, an underlayer of a CrNi-based alloy, a Cr intermediate layer and an anisotropic magnetic recording layer (see paragraph 3 and Table 1 of translation).

Claim Rejections - 35 USC § 102/103

8. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 5-6 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Okumura et al. (US 5700593).

Okumura et al. disclose all of the limitations of the claims as detailed above except for the method step of depositing a "relatively larger number" of particles having a directional component along the direction of magnetic anisotropy. While the reference doesn't explicitly disclose this, it is the Examiner's contention that this is an inherent feature of the sputtering process taught by Okumura et al. That is, because Okumura et al. teach forming an *anisotropic* magnetic recording layer via sputtering, the sputtering process necessary allows for the deposition of a greater number of particles in the direction of magnetic anisotropy.

Claim Rejections - 35 USC § 103

10. Claims 16-17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okumura et al. (US 5700593) in view of Chang et al. (US 2002/0132139).

Okumura et al. teaches all of the limitations of the claims, as detailed above, except for the presence of an intermediate layer between the underlayer and the magnetic layer.

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Chang et al. teaches that it is known in the art to add a non-magnetic hcp intermediate layer in between a Co-based magnetic layer a bcc Cr-based underlayer in order to improve lattice matching between the layers (see paragraph 21).

It would have been obvious to one of ordinary skill in the art at the time of invention to add such an intermediate layer in between the bcc Cr underlayer and the Co-based hcp magnetic layer taught by Okumura et al. in order to improve lattice matching between layers.

Conclusion

11. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. JP 10-092638 is cited as art of interest.

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Holly Rickman whose telephone number is (571) 272-1514. The examiner can normally be reached on Monday-Friday 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul J. Thibodeau can be reached on (571) 272-1516. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9310.



Holly Rickman
Primary Examiner
Art Unit 1773

hcr
January 9, 2004